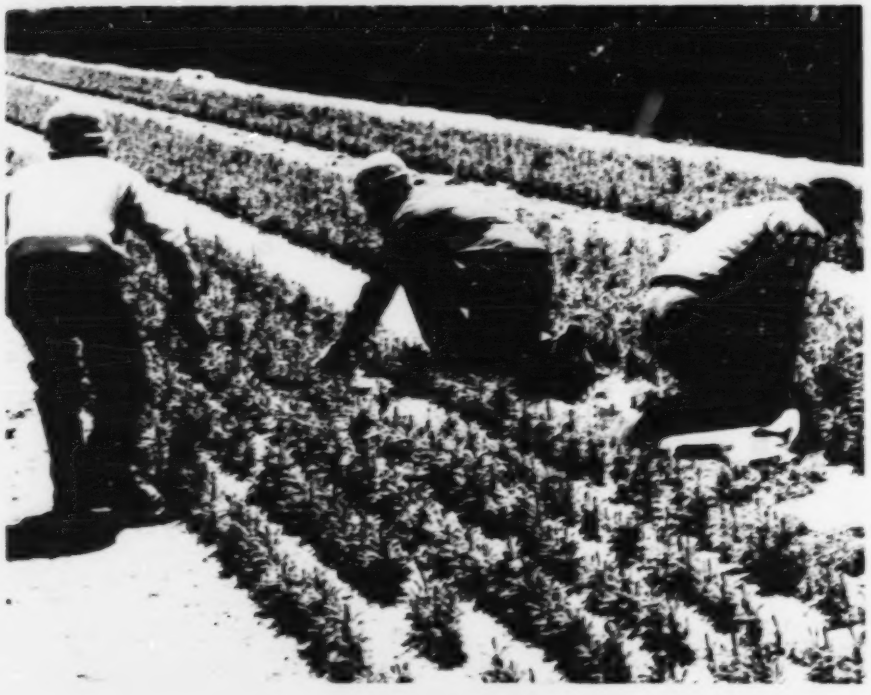
CANADA-QUEBEC
SUBSIDIARY AGREEMENT
on forest development



1989-1990
Annual Report

Canada

Québec

CANADA-QUEBEC
SUBSIDIARY AGREEMENT
ON FOREST
DEVELOPMENT

1989-1990

ANNUAL REPORT

OCTOBER 1990

91-04752/

© Minister of Supply and Services Canada 1990

Catalog No. Fo1-5/1990E
ISBN 0-662-18344-4
ISSN 0838-2743
Printed in Canada

Limited additional copies of this publication are available at no charge from:

Forestry Canada, Quebec Region
Laurentian Forestry Centre
1055 du P.E.P.S.
P.O. Box 3800
Sainte-Foy, Quebec
G1V 4C7
Tel.: (418) 648-5850

Ministère de l'Énergie et des Ressources du Québec
Direction des communications
5700, 4e Avenue Ouest, 3e étage
Charlesbourg, Québec
G1H 6R1

Tel.: (418) 646-2727

Copies or microfiches of this publication may be purchased from:
Micromedia Inc.
Place du Portage
165, Hôtel-de-Ville
Hull, Quebec
J8X 3X2

Aussi disponible en français sous le titre «Entente auxiliaire Canada-Québec sur le développement forestier. Rapport annuel 1989-1990».

CANADA-QUEBEC SUBSIDIARY AGREEMENT

ON FOREST DEVELOPMENT

(1985-1990)

Management Committee

Yvan Hardy, federal co-chairman, Forestry Canada

Bernard Harvey, provincial co-chairman, Ministère de l'Énergie et des Ressources du Québec

Normand Lafrenière, Forestry Canada

Jacques Caron, Ministère de l'Énergie et des Ressources du Québec

Renaud Lévesque, replaced by Diane Bellon, Department of Industry, Science and Technology Canada

Roger Paquet, Secretariat for Canadian Intergovernmental Affairs

Co-secretaries

Michel Brochu, Ministère de l'Énergie et des Ressources du Québec

Augustin Lebeau, Forestry Canada

Denis Trudel, Ministère de l'Énergie et des Ressources du Québec

1989-1990

ANNUAL REPORT

Approved by the Management Committee 1990

TABLE OF CONTENTS

PAGE

Table of contents v
List of tables and figures vii
Summary ix

I - INTRODUCTION 1

1.1 - BACKGROUND 1
1.2 - OBJECTIVES 2
1.3 - BUDGETARY PROGRAMMING 4

II - REVIEW OF ACTIVITIES 8

2.1 - CROWN LAND FOREST MANAGEMENT 8
2.1.1 - Seed Production 10
2.1.2 - Production of Seedlings 10
2.1.3 - Plantation 12
2.1.4 - Plantation Maintenance 14
2.1.5 - Applied Research 14

2.2 - MANAGEMENT OF PRIVATE WOODLANDS 15
2.2.1 - Site Preparation 16
2.2.2 - Planting 16

2.3 - MANAGEMENT OF FEDERAL WOODLANDS 18

2.4 - GREENHOUSE INFRASTRUCTURES 22

2.5 - FIGHT AGAINST MAPLE DIEBACK 24
2.5.1 - Accelerated Research and Development 24
2.5.2 - Operational Fertilization 24
2.5.3 - Management 25

2.6 - MANAGEMENT, INFORMATION AND EVALUATION 25
2.6.1 - Management 25
2.6.2 - Information 26
2.6.3 - Evaluation 26

2.7 - COMMUNICATIONS 27

III - **1990-1991 PROGRAMMING** 28

APPENDIX A: Canada-Quebec Subsidiary Agreement on Forest Development, forestry operations and expenditures by activity and administrative region (1989-1990) 31

APPENDIX B: Crown Land Forest Management Program, list of applied research projects funded by the Agreement (1989-1990) 43

APPENDIX C: Fight against Maple Dieback Program, list of accelerated research and development projects funded by the Agreement (1989-1990) 49

LIST OF TABLES AND FIGURES

Table 1: Revised budgetary programming at the end of the fifth year of operation 7

Table 2: Summary of forestry operations and expenditures by program and activity for the province of Quebec (1989-1990) 9

Table 3: Summary of expenditures ($000) by administrative region and by program (1989-1990) 11

Table 4: Relative importance of silvicultural treatments carried out by administrative region and land tenure (1989-1990) 13

Table 5: Management of Federal Woodlands Program - operations, jobs and expenditures by Indian reserve (1989-1990) 20

Table 6: Greenhouse Infrastructure Program - list of investments by nursery (1989-1990) 23

Figure 1: Work performed under the management of Federal Woodlands Program from 1986 to 1990 21

SUMMARY

This fifth year of operation showed a normal drop in expenditures, given the approaching expiry of the Agreement. The roughly $57.1 million spent in 1989-1990 represented 18% of the overall budget of the Agreement. Compared with 1988-1989, this amount was 33% lower. Most programs saw their expenditures decline by between 17% and 66% with the exception of the Management of Federal Woodlands Program and the Fight Against Maple Dieback Program, for which spending increased considerably.

As in previous years, the Crown Land Forest Management Program claimed the bulk of the budget. With over 55% of annual expenditures under the Agreement, this program led to outlays of $31.6 million. Of that amount, 95% was allocated to the Plantation activity for site preparation of 36 270 ha and the manual planting of 41 807 ha. The Applied Research component claimed $1.45 million, allowing 29 research projects to be carried out.

As for the Management of Private Woodlands Program, expenditures for the two facets of this program totalled over $18.5 million. Of that amount, 35% was spent on site preparation of 15 280 ha and 65% on planting for the reforestation of 23 672 ha and the maintenance of 4,868 ha. The proportion of work carried out on woodlots owned by non-members of group ventures remained unchanged in 1988-1989.

The federal Forest Management Program of Indian Lands generated expenditures of $1.3 million. Thirteen band councils and the association of Atikamekw band councils received grants that allowed them to carry out silvicultural work on 1 800 ha, thus creating 1 715 person-weeks of employment.

The provincial program for the management of Greenhouse Infrastructures recorded a major reduction (66%) in relation to the previous year, with expenditures of $963 400. The bulk of that sum was spent on the construction of cold rooms at the Berthierville nursery.

The Fight Against Maple Dieback Program, in its second year, saw expenditures climb sharply to $3.5 million. Nearly 6 270 ha of maple groves were fertilized and eight research projects were conducted.

Finally, the federal Management, Information and Evaluation Program posted expenditures of over $1.2 million.

I - INTRODUCTION

The Canada-Quebec Subsidiary Agreement on Forest Development was signed in Quebec City on April 30, 1985. The aim of the Agreement was to promote cooperation and coordination between the Government of Canada and the Government of Quebec in implementing measures intended to stimulate forestry development and to increase the economic impact of forestry activity in Quebec.

This document is the annual report covering the fifth year of operation of the Agreement. More specifically, it is a report by the Management Committee on the state of advancement of programs implemented under the Agreement during the year 1989-1990. *Section I* gives a brief background of the Agreement and reviews the objectives, programs and activities involved, as well as the budget allotted to each component. *Section II* gives an update of the different programs of the Agreement in place during the fifth year of operation. In addition to reviewing activities, this section allows comparisons to be made with the results of previous years. *Section III* outlines a few considerations of programming for 1990-1991.

1.1 - BACKGROUND

On December 14, 1984, the Governments of Canada and Quebec renewed their master agreement concerning economic and regional development. They focussed, among other things, on the principle of intensive management of Quebec forests with a view to contributing to the development of the forest industry and creating employment. A few months later, on April 30, 1985, the federal Forestry Minister and his Quebec counterpart signed the Subsidiary Agreement on Forest Development. This five-year agreement was given an initial

budget of $300 million but underwent several modifications over the years.

In March 1989, it was decided to insert a program to fight maple dieback and to allocate a budget (1988-1993) of $10.1 million to it. Of that amount, it was first agreed (amendment number 5) that the sum of $3.8 million would be added to the overall budget of the Agreement to finance the first two years of implementation of the new program. In March 1990, it was decided to modify the Agreement again through amendment number 6, which extended the Agreement to March 31, 1991, and the maple dieback program to March 31, 1993. Finally, in September 1990, a further amendment (number 7) raised the overall budget of the Agreement to $310.1 million, the additional $6.3 million being used to finance the last three years of the Fight Against Maple Dieback Program.

The $310.1 million in expenditures provided for in the Agreement are shared equally by the two levels of government. Each of the parties assumes full administrative and financial responsibility for the sum of $9.5 million. The Government of Quebec has reserved these funds for the completion of the capital investment program in its network of nurseries. The federal government, for its part, has earmarked that amount to finance the Management of Federal Woodlands and the Management, Information and Evaluation programs.

1.2 - OBJECTIVES

Forests are assets of such importance that it is imperative that all necessary efforts be deployed to ensure that resources are preserved and that jobs in the sector are

maintained. Analysis shows that the major weakness of the forest sector in Quebec centres largely on timber supply, not only for the development of the forest industry, taking into account its growth prospects, but also to simply sustain existing mills. Moreover, hardwood forests in Quebec have sustained a progressive and unusual dieback since the beginning of this decade. Given the anticipated problems, the Government of Canada has agreed to support the initiatives of the Government of Quebec by providing financing to cover part of the expenditures committed by the province to forest management. The objectives of the Agreement and the programs put forward to achieve them are geared to timber production and, in the case of maples, protection. They aim to:

a) encourage and support forest management activities to increase the available supply of timber and thus improve the viability and long-term competitiveness of the forest industry in Quebec;

b) put back into production productive Crown and private forest lands, including federal lands, in Quebec;

c) encourage applied forest research activities related to programs under the Agreement, as well as technology transfer and dissemination of research findings; and

d) reduce maple dieback.[1]

---

[1] This new objective was included in the Agreement by the signing of amendment number 5, dated March 30, 1989.

1.3 - *BUDGETARY PROGRAMMING*

In view of the above objectives, the sums allocated are distributed by individual program based on the following criteria:

1. *Crown Land Forest Management Program*

   Because of the major role of Crown woodlands in supplying industry needs (roughly 78%), $189.4 million has been set aside to manage these lands. Most of the funds go to reforestation, but the program also covers plantation maintenance, applied research, seed production and seedling production. The two governments contribute equally to the financing of the program.

2. *Management of Private Woodlands Program*

   Since private woodlots supply about 22% of industry needs and have the advantages of greater soil productivity and proximity to mills, $89.7 million is allocated to manage these lands. The program, financed equally by the two levels of government, includes site preparation and planting (reforestation and plantation maintenance).

3. *Management of Federal Woodlands Program*

   This program is aimed more specifically at managing Indian lands. Indian reserves have definite forestry potential and their development could generate major socio-economic benefits for natives. It was therefore agreed that $4 million would be allotted to this program

and that funding would be provided directly by the federal government.

4. *Greenhouse Infrastructure Program*

The purpose of this program is to complete facilities for the nurseries of the Ministère de l'Énergie et des Ressources du Québec. These facilities are to be used to produce planting stock required for the reforestation program. It was agreed that $9.5 million would be allotted to the program and that funding would be provided directly by the provincial government.

5. *Fight Against Maple Dieback Program*

Given the scope of maple dieback in recent years, the two levels of government decided, in 1988, to incorporate in the Agreement a program to fight maple dieback and to allocate an overall budget of $10.1 million to it. Activities of the five-year program (1988-1993) include accelerated research and development, operational fertilization and management.

6. *Management, Information and Evaluation Program*

To enable the federal government to monitor the technical and financial aspects of the Agreement and to maintain effective coordination and co-management of the terms of the Agreement, $5.5 million was allotted to this program, funded entirely by the federal government.

This program also includes various information activities aimed at making the general public and forestry

participants aware of problems facing forests in Quebec and of the financial and technical support provided to the Quebec forestry sector by the two levels of government.

Finally, a study to evaluate the Agreement, to be funded under this program, is planned.

7. *Communications Program*

This jointly-financed program includes regional communications activities on forestry programs, arranged by the Ministère de l'Énergie et des Ressources du Québec, and a national publicity campaign on forests, organized by Forestry Canada. It was agreed to allot $1.9 million to this program during the years 1986-1987 and 1987-1988.

Table 1, which follows, shows the revised budgetary programming at the end of the fifth year of operation. It lists expenditures by program over the first five years of the Agreement and projected expenditures from 1990 to 1993.

TABLE 1. REVISED BUDGETARY PROGRAMMING AT THE END OF THE FIFTH YEAR OF OPERATION ($ 000)

	PROGRAMS	1985-1988 ACTUAL	1988-1989 ACTUAL	1989-1990 ACTUAL	1990-1991 PROJECTED	1991-1993 PROJECTED FORWARD	FUNDS NOT CARRIED	TOTAL
1.0	**CROWN LAND FOREST MANAGEMENT**							
	1.1 Seed Production	1 269.8	0.0					1 269.8
	1.2 Production of Seedlings	11 002.1	0.0					11 002.1
	1.3 Plantation	71 482.2	41 723.7	30 118.0	3 647.9			146 971.8
	1.4 Plantation Maintenance	14 542.9	7 453.4					21 996.3
	1.5 Applied Research	4 611.6	2 134.5	1 453.9				8 200.0
	SUB-TOTAL	102 908.6	51 311.6	31 571.9	3 647.9			189 440.0
2.0	**MANAGEMENT OF PRIVATE WOODLANDS**							
	2.1 Site Preparation	19 877.6	12 359.2	6 572.8			272.32	39 081.9
	2.2 Planting	21 338.2	15 526.0	11 968.0	1 578.9		280.80	50 619.9
	SUB-TOTAL	41 215.8	27 885.2	18 540.8	1 578.9		481.12	89 701.8
3.0	**MANAGEMENT OF FEDERAL WOODLANDS**							
	3.1 Silvicultural Treatments	792.1	344.0	556.7				
	3.2 Road Constr. or Improvement	100.2	132.6	17.4				
	3.3 Tech. Support and Administration	782.5	509.0	721.9				
	SUB-TOTAL	1 674.8	985.6	1 296.0			43.60	4 000.0
4.0	**GREENHOUSE INFRASTRUCTURES**	5 713.8	2 805.9	963.4				9 483.1
5.0	**FIGHT AGAINST MAPLE DIEBACK**							
	5.1 Accelerated Res. and Devel.		361.8	628.7	450.0	1 102.0	31.50	2 574.0
	5.2 Operational Fertilization			2 086.6	1 748.0	1 310.6	12.80	5 158.0
	5.3 Management		5.0	762.3	494.0	1 106.7		2 368.0
	SUB-TOTAL		366.8	3 477.6	2 692.0	3 519.3	44.30	10 100.0
6.0	**MANAGEMENT, INF. AND EVALUATION**	1 869.2	1 460.4	1 210.6	822.0		120.90	5 483.1
7.0	**COMMUNICATIONS**							
	7.1 Regional Activities	858.2						858.2
	7.2 National Activities	1 033.8						1 033.8
	SUB-TOTAL	1 892.0						1 892.0
TOTAL		155 274.2	84 815.5	57 060.3	8 740.8	3 519.3	689.92	310 100.0

II - REVIEW OF ACTIVITIES

This section gives an overview of the results for the fiscal year 1989-1990 of the Canada-Quebec Subsidiary Agreement on Forest Development. This fifth year of operation produced expenditures of $57.1 million, representing a drop of 33% in relation to the previous year. This decline in expenditures was expected in view of the approaching expiry of the Agreement.

In financial terms, it should be noted, the Crown Land Forest Management, Management of Private Woodlands and Greenhouse Infrastructure programs achieved 100% of their objectives, while the Fight Against Maple Dieback, Management of Federal Woodlands and Management, Information and Evaluation programs reached, respectively, 99%, 97% and 93% of their targets for the year. These percentages were calculated by taking into account the changes made to the Agreement by amendment number 7. Table 2 summarizes forestry operations and expenditures in Quebec, by program and activity, for 1989-1990. What follows is a review of the activities of each program under the Agreement.

2.1 - CROWN LAND FOREST MANAGEMENT

This program claimed over 60% of the overall budget of the Agreement, or $189.4 million. This year, $31.6 million was invested in the program and, as planned, 35% of funding was

TABLE 2. SUMMARY OF FORESTRY OPERATIONS AND EXPENDITURES BY PROGRAM AND ACTIVITY FOR THE PROVINCE OF QUEBEC (1) 1989-1990

	PROGRAMS - ACTIVITIES	PROJECTED	REALIZED	EXPENDITURES ($ 000)
1.	CROWN LANDS			
	1.1 Plantation			
	. Site preparation	35 376 ha	36 270 ha	10 502.9
	. Manual planting (2)	40 057 ha	41 807 ha	
	1.2 Plantation maintenance	ha	ha	19 615.1
	1.3 Applied research	N/A	N/A	1 453.9
2.	PRIVATE WOODLANDS			
	2.1 Site preparation			
	. independent (3)	3 085 ha	3 357 ha	1 318.2
	. associated (4)	12 338 ha	11 923 ha	5 254.6
	2.2 Planting			
	- reforestation (5)			
	. independent (3)	6 005 ha	6 392 ha	2 693.1
	. associated (4)	14 386 ha	17 280 ha	7 490.6
	- maintenance			
	. independent (3)	1 235 ha	759 ha	270.5
	. associated (4)	5 941 ha	4 109 ha	1 513.8
3.	FEDERAL WOODLANDS			
	3.1 Silvicultural treatments	2 111 ha(6)	1 800 ha	556.7
	3.2 Roads (7)	7 km	6 km	17.4
	3.3 Technical support and administration	N/A	N/A	707.3
4.	GREENHOUSE INFRASTRUCTURES	N/A	N/A	963.4
5.	FIGHT AGAINST MAPLE DIEBACK			
	5.1 Accelerated research	N/A	N/A	628.7
	5.2 Fertilization	5 582 ha	6 265 ha	2 086.6
	5.3 Management	N/A	N/A	762.3
6.	MANAGEMENT, INFORMATION AND EVALUATION	N/A	N/A	1 210.6
			TOTAL	57 045.7 (8)

N/A Not applicable.
(1) This table is reproduced in Appendix A for each of the administrative regions of Quebec.
(2) Surface area is calculated based on a ratio of 2 200 seedlings/ha for the planting of softwoods and 800 seedlings/ha for the planting of hardwoods and reinforcement planting.
(3) Work carried out by woodlot owners who are not members of a group venture.
(4) Work carried out by woodlot owners who are members of a group venture.
(5) Surface area is calculated based on a ratio of 2 500 seedlings/ha for the planting of softwoods and reinforcement planting, and 1 500 seedlings/ha for the planting of hardwoods.
(6) Surface area is calculated based on a ratio of 2 500 seedlings/ha for the planting of softwoods and 1 100 seedlings/ha for reinforcement planting.
(7) Road construction or improvement.
(8) To this amount must be added adjustments to the Management of Federal Woodlands program, for a total of $57 060 273.

provided by the Quebec government and 65% by the federal government. In relation to 1988-1989, this amount represents a 39% reduction in expenditures.

The breakdown of expenditures by administrative region appears in Table 3. The Saguenay/Lac St-Jean region received 24% of the funds allocated to this program. When the Lower St.Lawrence/Gaspé (16%) and Trois Rivières (15%) regions are added, 55% of total program expenditures are accounted for. Next in line are the Quebec City (11%), Abitibi-Temiscaming (10%), Outaouais (10%) and Montreal (9%) regions.

Compared with 1988-1989, all regions experienced a decline in expenditures ranging from 7% to 54%, with the exception of the Saguenay/Lac St-Jean region, which posted a rise of 11%. The regions recording the largest reductions - 54%, 53% and 52%, respectively - were Quebec City, the Lower St.Lawrence/ Gaspé and Abitibi/Temiscaming.

2.1.1 - Seed Production

As initially planned, this activity received joint financing only in 1985-1986.

2.1.2 - Production of Seedlings

As in the case of the preceding activity, seedling production was jointly funded only in 1985-1986.

Table 3. SUMMARY OF EXPENDITURES ($000) BY ADMINISTRATIVE REGION AND BY PROGRAM
FISCAL YEAR 1989-1990

PROGRAMS / REGIONS	CROWN LANDS		PRIVATE WOODLANDS		FEDERAL WOODLANDS		GREENHOUSES		MAPLE DIEBACK		MANAGEMENT, INFORMATION AND EVALUATION		TOTAL	
	Projected (1)	Actual	Projected (1)	Actual	Projected (1)	Actual	Projected (1)	Actual	Projected (1)	Actual	Projected (1)	Actual	Projected (1)	Actual
01 Lower St.Lawrence/Gaspé	5 123.5	5 123.5	3 245.2	3 245.2	97.0	77.1							8 465.7	8 445.8
02 Saguenay/Lac St-Jean	7 673.8	7 673.8	2 222.3	2 222.3	262.6	250.2	81.7	107.4					10 240.4	10 253.7
03 Quebec City	3 584.2	3 563.8	5 304.9	5 304.9					2 039.0	2 911.1	2 131.5	1 210.6	13 059.6	12 990.4
04 Trois Rivières	4 796.2	4 796.2	2114.1	2 114.1	269.7	259.9			145.0	45.0			7 325.0	7 215.2
05 Eastern Townships	244.0	244.0	2 024.9	2 024.9					470.0	421.5			2 738.9	2 690.4
06 Montreal	2 895.6	2 905.0	1 005.0	1 005.0	114.2	84.2	800.0	748.6	100.0	100.0			4 914.8	4 842.8
07 Outaouais	3 084.8	3 084.8	700.4	700.4	68.2	68.2							3 853.4	3 853.4
08 Abitibi/Temiscaming	3 167.2	3 178.2	1 660.1	1 660.1	272.6	291.2	81.7	107.4					5 181.6	5 236.9
09 North Shore	1 002.6	1 002.6	263.9	263.9	255.3	250.6							1 521.8	1 517.1
10 Northern Quebec														
Total:	31 571.9	31 571.9	18 540.8	18 540.8	1 339.6	1 281.4[2]	963.4	963.4	2 754.0	3 477.6	2 131.5	1 210.6	57 301.2	57 045.7[3]

1 These are initial estimates.

2 To this amount must be added financial adjustments of $14 573, for a total of $1 295 964.

3 To this amount must be added adjustments to the Management of Federal Woodlands Program (2), for a total of $57 060 273.

2.1.3 - Plantation

With expenditures of $30.1 million, the plantation component experienced a 28% drop in spending in 1989-1990 compared with the previous year. The relative share of this activity nevertheless increased, accounting for 95% of expenditures made under this program, compared with 80% the three previous years.

The plantation component is split into two sub-activities: site preparation and manual planting. These two sub-activities covered a total of 78 077 ha in 1989-1990, or 36 270 ha of site preparation and 41 807 ha of manual planting.

It should be noted that scarification, the main method of site preparation financed by the program in 1989-1990, was carried out at an average rate of $163/ha, or roughly the same unit cost as the previous year.

Manual planting of containerized softwood seedlings was carried out at an average rate of $387/ha ($0.176/seedling) compared with $497/ha ($0.226/seedling) for bare root planting.

For further details concerning plantation activities and expenditures by administrative region, see Appendix A at the end of this report.

TABLE 4. RELATIVE IMPORTANCE OF SILVICULTURAL TREATMENTS CARRIED OUT BY ADMINISTRATIVE REGION AND LAND TENURE
FISCAL YEAR 1989-1990

REGIONS	PROGRAMS	CROWN LAND FOREST MANAGEMENT						MANAGEMENT OF PRIVATE WOODLANDS					
	SILVICULTURAL TREATMENTS	SITE PREPARATION (ha)		MANUAL PLANTING (ha)[1]		PLANTATION MAINTENANCE (ha)		SITE PREPARATION (ha)		REFORESTATION PLANTING (ha)[2]		PLANTING AND MAINTENANCE (ha)	
		Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual
01	Lower St.Lawrence/Gaspé	6 849	5 031	6 837	7 429			2 415	2 363	3 261	3 834	1 755	1 329
02	Saguenay/Lac St-Jean	12 140	14 402	11 296	13 063			2 039	2 569	2 269	2 060	809	649
03	Quebec City	2 360	1 851	3 602	3 618			4 279	4 078	6 376	7 683	1 778	887
04	Trois Rivières	2 435	3 013	6 160	5 740			1 751	1 674	2 320	3 061	848	184
05	Eastern Townships	450	262	84	140			1 972	2 036	2 068	2 462	643	264
06	Montreal	2 947	2 303	2 403	3 684			855	844	1 220	1 412	261	69
07	Outaouais	3 234	3 577	2 985	3 996			581	569	885	890	193	215
08	Abitibi/Temiscaming	2 815	3 278	5 509	3 410			1 235	863	1 753	1 943	805	1 267
09	North Shore	2 146	2 553	1 181	727			296	284	239	327	84	4
10	Northern Quebec												
	TOTAL:	35 376	36 270	40 057	41 807			15 423	15 280	20 391	23 672	7 176	4 868

1 Surface area is calculated based on a ratio of 2 200 seedlings/ha for the planting of softwoods and 800 seedlings/ha for the planting of hardwoods and reinforcement planting.

2 Surface area is calculated based on a ratio of 2 500 seedlings/ha for the planting of softwoods and reinforcement planting and 1 500 seedlings/ha for the planting of hardwoods.

2.1.4 - Plantation Maintenance

As initially planned, this activity received no joint financing in 1989-1990.

2.1.5 - Applied Research

Nearly $1.5 million was allocated to research in 1989-1990, representing 4.6% of the funds spent on the Crown Land Management Program and 2.6% of total expenditures under the Agreement this past year. The relative share of funding given to research has remained stable since the beginning of the Agreement.

Research projects are carried out by the Ministère de l'Énergie et des Ressources du Québec and come under four headings, each representing a very specific research field. In forest improvement, $829 000 was spent on 24 of the 29 research projects. Under the heading of technology transfer, four projects were carried out at a total cost of $508 500. Finally, in forest protection, a project concerning maple dieback led to expenditures of $124 500. No projects under the theme of ecology and inventory were carried out this past year.

Looking at the breakdown of expenditures by region (Appendix A), one can see that research projects were carried out in four of the ten regions. The Quebec City region received the largest share of funding, with close to 64%. The Outaouais region, which received $452 400 was second. These funds, which represented 31% of expenditures, went to the Technology Transfer Centre in Maniwaki for protection against forest

fires. Two other regions, Abitibi-Temiscaming and Montreal, shared the remaining 5%.

Appendix B at the end of the report gives further details concerning the various research projects carried out in 1989-1990 and the corresponding budgets.

2.2 - *MANAGEMENT OF PRIVATE WOODLANDS*

The Management of Private Woodlands Program claimed nearly 30% of the overall budget of the Agreement, or $89.7 million.

This program saw its annual expenditures grow steadily until 1988-1989 before dropping in 1989-1990. This past year, expenditures under this program were $18.5 million, or 34% less than in 1988-1989. This amount, representing almost a third of total expenditures under the Agreement in 1989-1990, was 35% financed by the Quebec government and 65% financed by the federal government, as planned.

The breakdown of expenditures by administrative region (Table 3) shows that the Quebec City region ranked first with $5.3 million, or 29% of total funding under this program. It is followed by the Lower St.Lawrence/Gaspé region with 18% of funds allocated to private woodlot owners, and Saguenay/Lac St Jean (12%), Trois-Rivières (11%) and the Eastern Townships (11%).

Each of the regions recorded a decline of at least 30% in expenditures in relation to the previous year, with the exception of Abitibi-Temiscaming, where spending remained stable. In absolute terms, the Quebec City region experienced the largest drop - $2.7 million - from the previous year. In

relative terms, however, the Trois Rivières region recorded the greatest decline at 41%.

The paragraphs that follow discuss expenditures and operations with regard to site preparation and planting activities. Each will be considered under two headings, namely: owners associated in a group venture and independent owners who receive individual assistance.

2.2.1 - Site Preparation

This activity involved expenditures of $6.6 million, or 36% of total expenditures under this program. In terms of operations, 15 280 ha were treated this past year, representing a drop of 48% in relation to the previous year.

The proportion of site preparation work carried out under the individual assistance component rose steadily over the first four years of the Agreement, climbing from 2 to 23%, and remaining relatively stable this past year (22%).

In terms of surface area, the Quebec City region dominated with 4 078 ha treated. It was followed by the Saguenay/Lac St-Jean region, with 2 569 ha, and the Lower St.Lawrence/Gaspé region, with 2 363 ha. These three regions thus accounted for 59% of the work performed. For further details concerning the other regions, see Table 4 and Appendix A.

2.2.2 - Planting

The Planting activity is subdivided into two components:

(a) reforestation

This component involved expenditures of $10.2 million, or 55% of the funds allocated to the program in 1989-1990.
Since the beginning of the Agreement, the number of hectares planted on private woodlands has risen steadily, with the exception of the past year. From 1985 to 1989, the surface area increased from 14 186 ha to 25 506 ha before dropping off to 23 672 ha in 1989-1990. The proportion of planting carried out through individual assistance stood at roughly 21% in the first three years before climbing to 27% in the past two years.

As with site preparation, it was in the Quebec City region that the largest proportion of reforestation (7 683 ha), or close to one third the provincial total was carried out. Next came the Lower St.Lawrence/Gaspé with some 3 834 ha and the Trois Rivières region with 3 061 ha. These three regions accounted for 62% of reforestation carried out on private woodlands in Quebec under the Agreement.

(b) maintenance

This component posted expenditures of $1.8 million in 1989-1990, or 10% of total expenditures under this program. Some 4 868 ha were treated, including 4 109 ha belonging to associated landowners and 759 ha belonging to independents. Although spending on this activity dropped substantially (by 64%) in relation to 1988-1989, the proportion of work carried out by independent landowners remained the same at 16%.

The breakdown of maintenance work by administrative region (Table 4) shows that in 1989-1990, the largest number of hectares treated, 1 329, were in the Lower St.Lawrence/Gaspé region, followed by the Abitibi/ Temiscaming region with 1 267 ha. Together, these two regions accounted for 53% of all maintenance work carried out on private woodlands in Quebec under the Agreement.

2.3 - *MANAGEMENT OF FEDERAL WOODLANDS*

The Management of Federal Woodlands Program currently concerns only Indian lands and is called the Forest Management Program of Indian Lands (FMPIL). Of the 25 reserves with definite forestry potential, 13 took part in the program this past year, as they had the year before. These 13 reserves, it should be noted, represent fully 90% of the accessible productive forest area on all Indian lands.

Investment for 1989-1990 reached close to $1.3 million. Funding has been climbing steadily since the beginning of the Agreement and last year's increase in relation to the previous year was over 30%.

Of the total expenditures this past year, $556 685 (43%) was spent on silvicultural treatments. This represents a rise of 62% in relation to the previous year. Only $17 381, or 1% of total expenditures, went to roads, compared with $132 599 the previous year. Finally, technical assistance claimed $707 325, or 55% of total expenditures under the program. This was 39% higher than the previous year and included not only funding of technical crews and native forestry trainees working in communities, but also the costs of administration, various forest studies and the Whitworth management plan.

In terms of operations, a total of 1 800 ha underwent various treatments. Almost 1.7 million seedlings (753 ha) were transplanted and site preparation was carried out on 713 ha. In addition, 167 ha were treated in order to be put back into production, 123 ha of plantation were maintained and stand tending was carried out on 44 ha.

Table 5 shows the different operations performed by individual band councils as well as spending and jobs created. Figure 1 gives a breakdown of the various silvicultural treatments carried out since 1986 for all Indian reserves that have taken part in the program. It shows that 1989-1990 was the year in which the greatest amount of reforestation and plantation maintenance was performed.

TABLE 5. MANAGEMENT OF FEDERAL WOODLANDS PROGRAM OPERATIONS, JOBS AND EXPENDITURES BY INDIAN RESERVE 1989-1990

BAND COUNCIL (REGION)	ACCESSIBLE PRODUCTIVE AREA ha	WORK PERFORMED ha[2]	WORK PERFORMED km[3]	JOBS CREATED Person/weeks	TOTAL EXPENDITURES $ 000
Atikamekw Sipi (04)[1]	N/A	N/A	N/A	156	162.2
Betsiamites (09)	19 020	306.4	5	240	219.1
Doncaster (06)	7 149	10.7	0	26	15.7
Lac Simon (08)	238	33.4	0.71	96	65.8
Maliotenam (09)	300	68.4	0	79	31.5
Manouane (06)	723	105	0	153	68.5
Mistassini (02)	68 344	365.3	0	162	165.8
Obedjiwan (04)	802	35.1	0	66	30.3
Ouiatchouane (02)	673	147.6	0	97	84.4
Restigouche (01)	3 325	61.1	0	162	74.4
River Desert (07)	15 140	142.5	0	158	68.2
Waswanipi (08)	32 800	403.5	0	179	225.4
Weymontachie (04)	2 885	120.7	0	138	67.4
Whitworth (01)	161	0	0	3	2.7
TOTAL	151 560	1 799.7	5.71	1 715	1 296.0[4]

N/A Not applicable.

1 Association of Atikamekw band councils including the reserves of Manouane, Obedjiwan and Weymontachie which received financial assistance for technical support.

2 Total surface area on which silvicultural treatments were performed.

3 Road construction or improvement.

4 Includes financial adjustments (Mistassini $961, Restigouche $3 613) and $10 000 in connection with the national native symposium.

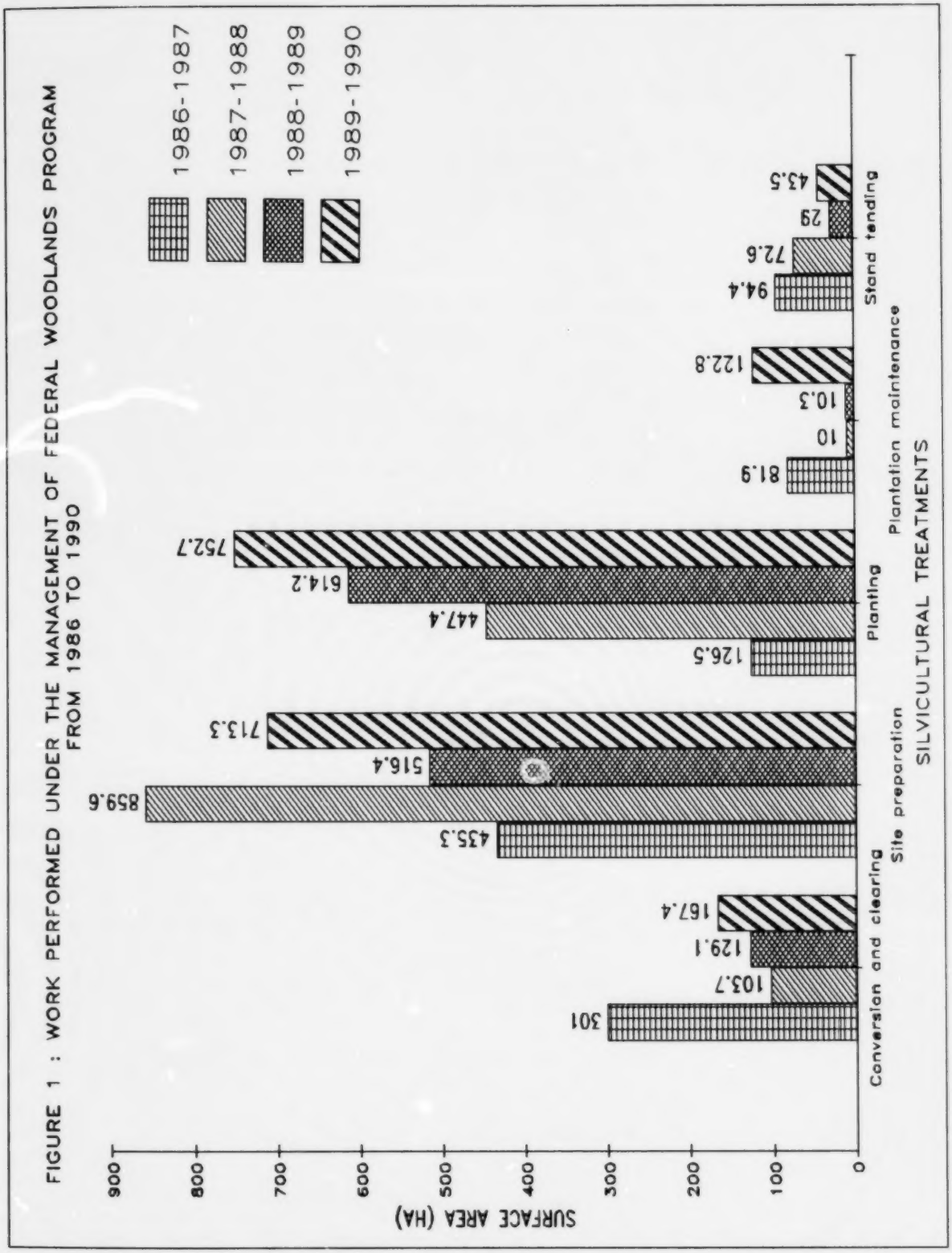


FIGURE 1 : WORK PERFORMED UNDER THE MANAGEMENT OF FEDERAL WOODLANDS PROGRAM
FROM 1986 TO 1990
1986-1987
1987-1988
1988-1989
1989-1990
SURFACE AREA (HA)
0
100
200
300
400
500
600
700
800
900
301
103.7
129.1
167.4
435.3
859.6
516.4
713.3
126.5
447.4
614.2
752.7
81.9
10
10.3
122.8
94.4
72.6
29
43.5
Conversion and clearing
Site preparation
Planting
Plantation maintenance
Stand tending
SILVICULTURAL TREATMENTS

2.4 - GREENHOUSE INFRASTRUCTURES

This year, $963 400 was allocated to this program, allowing improvements to be made in three Quebec nurseries. This sum was $1.8 million (66%) below that spent the previous year.

As Table 6 shows, the largest share of that sum, or $748 600 (78%), was allotted to the nursery in Berthierville (Montreal) for the construction of cold rooms adjoining the seed extraction plant.

The Normandin nursery (Saguenay/Lac St-Jean) and the Trécesson nursery (Abitibi/Temiscaming) received $107 400 each for the construction of pesticide storage facilities.

TABLE 6: GREENHOUSE INFRASTRUCTURE PROGRAM
LIST OF INVESTMENTS BY NURSERY
1989-1990

NURSERY (REGION)	PROJECT DESCRIPTION	EXPENDITURE ($ 000)
Normandin (02)	Construction of a pesticide warehouse	107.4
Berthier (06)	Construction of cold rooms	748.6
Trécesson (08)	Construction of a pesticide warehouse	107.4
	TOTAL	963.4

2.5 - *FIGHT AGAINST MAPLE DIEBACK*

This program, in its second year of operation, posted expenditures of $3.5 million in 1989-1990. This represents a major increase over the previous year when expenditures were $366 800. The three components of the program - accelerated research and development, operational fertilization and management - are discussed below.

2.5.1 - Accelerated Research and Development

In accelerated research and development, $628 700 was spent on eight different projects and to conduct analyses of plant tissue and soil samples at the Rock Forest laboratory.

The Quebec City region received 61% of funding for this activity, the Eastern Townships and Montreal 16% each, and Trois Rivières 7%. Appendix C contains a list of accelerated research and development projects financed by the program in 1989-1990.

2.5.2 - Operational Fertilization

This component claimed $2.1 million during the past year, or 60% of total expenditures under the program.

Of that amount, $1.9 million was used to fertilize 536 maple groves, thus meeting 41% of demand by owners. Of the total surface area fertilized, 6 265 ha, 82% was in the Quebec City region and 18% in the Eastern Townships. Eighty-eight per cent of fertilizer spreading was done from the air and 12% on the ground. On average, 11.7 ha of woodland were fertilized for each individual owner at a rate of $299/ha.

Finally, a sum of $220 000 was used to buy equipment for the leaf and soil analysis laboratory at the Université Laval.

2.5.3 - **Management**

Initially, funds to cover the administration and operation of the Fight Against Maple Dieback Program were included in the Management, Information and Evaluation Program. Amendment number 7 shifted those funds to the maple dieback program, under the item Management.

In 1989-1990, this activity led to expenditures of $762 300, or 22% of total spending under this program.

2.6 - *MANAGEMENT, INFORMATION AND EVALUATION*

This program, financed directly by the federal government, led to expenditures of $1.2 million this past year. This may appear low in relation to projected spending ($2.1 million) but one must consider that $762 300 were transferred to the Fight Against Maple Dieback Program (amendment number 7). This program has three components: management, information and evaluation.

2.6.1 - **Management**

This past year the management of the Agreement required expenditures of $1.1 million. This amount allowed Forestry Canada to assume the financial, administrative and technical responsibilities resulting from the operations of the Agreement.

2.6.2 - Information

The sum of $92 138 was spent this past year on various information activities such as the production of forest-related documents and the release of announcements concerning Forestry Canada's mandate in the area of agreements and research. Forestry Canada also took part in many exhibitions related to the forest sector.

2.6.3 - Evaluation

This activity led to expenditures of $59 103.

A study to evaluate the Forest Management Program of Indian Lands was conducted according to the evaluation framework laid out by Forestry Canada in 1987-1988. The study examined interest and participation among natives, the degree to which program objectives were achieved, the efficiency of implementation, unforeseen effects, the soundness of the program and, finally, the question of program renewal.

A public information document entitled "Enhancing the Forest of Indian Lands" was produced to publicize the principal achievements of the Forest Management Program of Indian Lands from 1985 to 1990.

As for the final evaluation of the Agreement, it will be carried out using the methodology and evaluation criteria drawn up by the technical subcommittee (MERQ-FORCAN) and approved by the management committee. This joint evaluation, which analyses the socio-economic and financial impact of the Agreement, should be completed by the fall of 1990.

2.7 - COMMUNICATIONS

This program ended in 1987-1988.

III - 1990-1991 PROGRAMMING

For the fiscal year 1990-1991, the two parties agreed on a budget of $8.741 million.

Projected expenditures for the Crown Land Forest Management Program are $3 647 900, including $1 428 540 from the provincial government and $2 219 360 from the federal government. The entire budget will go to the plantation component for the planting of 22.7 million seedlings.

With regard to the Management of Private Woodlands Program, the financial participation of the two governments has been set at $782 040 for Quebec and $796 840 for Canada, for a total of $1 578 880. These funds will be used to plant 3 259 ha, with 24% of the work carried out by independent woodlot owners and 76% by group ventures.

The Management of Federal Woodlands, Greenhouse Infrastructures and Communications programs are completed, therefore no funding has been provided for those purposes.

For the Fight Against Maple Dieback Program, $2.692 million has been set aside, including $102 000 in direct financing from Quebec, $392 000 in direct financing from the federal government and $2.198 million in joint financing. Under the accelerated research and development component, seven projects will be carried out at a cost of $450 000. Operational fertilization will claim $1.748 million, which will be used to fertilize 5 795 ha in the Quebec City, Mauricie/Bois-Francs, Eastern Townships and Montreal regions. The management component will receive $494 000 in direct financing from the two levels of government: $102 000 from Quebec and $392 000 from the federal government.

Finally, $822 000 in direct federal funding will go to the Management, Information and Evaluation Program to follow up on the programs provided for in the Agreement.

APPENDIX A

CANADA-QUEBEC SUBSIDIARY AGREEMENT ON FOREST DEVELOPMENT

DETAILS OF FORESTRY OPERATIONS AND EXPENDITURES BY ACTIVITY AND ADMINISTRATIVE REGION

(1989-1990)

Region 01: Lower St.Lawrence/Gaspé

	PROGRAMS - ACTIVITIES	PROJECTED	REALIZED	EXPENDITURES ($ 000)
1.	CROWN LANDS			
	1.1 Plantation			
	. Site preparation	6 849 ha	5 031 ha	1 236.9
	. Manual planting[1]	6 837 ha	7 429 ha	3 886.6
	1.2 Plantation maintenance	ha	ha	
	1.3 Applied research	N/A	N/A	
2.	PRIVATE WOODLANDS			
	2.1 Site preparation			
	. independent[2]	ha	ha	
	. associated[3]	2 415 ha	2 363 ha	1 057.8
	2.2 Planting			
	- reforestation[4]			
	. independent[2]	ha	ha	
	. associated[3]	3 261 ha	3 834 ha	1 698.8
	- maintenance			
	. independent[2]	ha	ha	
	. associated[3]	1 755 ha	1 329 ha	488.6
3.	FEDERAL WOODLANDS (Restigouche and Whitworth)			
	3.1 Silvicultural treatments	142 ha[5]	61.1 ha	19.864
	3.2 Roads[6]	km	km	
	3.3 Technical support and administration	N/A	N/A	57.274
4.	GREENHOUSE INFRASTRUCTURES	N/A	N/A	
5.	FIGHT AGAINST MAPLE DIEBACK			
	5.1 Accelerated research	N/A	N/A	
	5.2 Operational fertilization	ha	ha	
	5.3 Management	N/A	N/A	
6.	MANAGEMENT, INFORMATION AND EVALUATION	N/A	N/A	
		TOTAL		8 445.8

N/A Not applicable.

1 Surface area is calculated based on a ratio of 2 200 seedlings/ha for the planting of softwoods and 800 seedlings/ha for the planting of hardwoods and reinforcement planting.

2 Work carried out by woodlot owners who are not members of a group venture.

3 Work carried out by woodlot owners who are members of a group venture.

4 Surface area is calculated based on a ratio of 2 500 seedlings/ha for the planting of softwoods and reinforcement planting, and 1 500 seedlings/ha for the planting of hardwoods.

5 For planting and reinforcement planting, surface area is estimated based on ratios of 2 500 seedlings/ha and 1 100 seedlings/ha respectively.

6 Road construction or improvement.

Region 02: Saguenay/Lac St-Jean

	PROGRAMS - ACTIVITIES	PROJECTED	REALIZED	EXPENDITURES ($ 000)
1.	CROWN LANDS			
	1.1 Plantation			
	. Site preparation	12 140 ha	14 402 ha	2 285.6
	. Manual planting[1]	11 296 ha	13 063 ha	5 388.2
	1.2 Plantation maintenance	ha	ha	
	1.3 Applied research	N/A	N/A	
2.	PRIVATE WOODLANDS			
	2.1 Site preparation			
	. independent[2]	366 ha	243 ha	91.9
	. associated[3]	1 673 ha	2 326 ha	987.4
	2.2 Planting			
	- reforestation[4]			
	. independent[2]	546 ha	664 ha	289.5
	. associated[3]	1 723 ha	1 396 ha	607.4
	- maintenance			
	. independent[2]	167 ha	20 ha	7.5
	. associated[3]	642 ha	629 ha	238.6
3.	FEDERAL WOODLANDS (Mistassini, Ouiatchouane)			
	3.1 Silvicultural treatments	542 ha[5]	512.9 ha	131.954
	3.2 Roads[6]	km	km	
	3.3 Technical support and administration	N/A	N/A	118.281
4.	GREENHOUSE INFRASTRUCTURES	N/A	N/A	107.4
5.	FIGHT AGAINST MAPLE DIEBACK			
	5.1 Accelerated research	N/A	N/A	
	5.2 Operational fertilization	ha	ha	
	5.3 Management	N/A	N/A	
6.	MANAGEMENT, INFORMATION AND EVALUATION	N/A	N/A	
			TOTAL	10 253.7

N/A Not applicable.
1 Surface area is calculated based on a ratio of 2 200 seedlings/ha for the planting of softwoods and 800 seedlings/ha for the planting of hardwoods and reinforcement planting.
2 Work carried out by woodlot owners who are not members of a group venture.
3 Work carried out by woodlot owners who are members of a group venture.
4 Surface area is calculated based on a ratio of 2 500 seedlings/ha for the planting of softwoods and reinforcement planting, and 1 500 seedlings/ha for the planting of hardwoods.
5 For planting and reinforcement planting, surface area is estimated based on ratios of 2 500 seedlings/ha and 1 100 seedlings/ha respectively.
6 Road construction or improvement.

Region 03: Quebec City

	PROGRAMS - ACTIVITIES	PROJECTED	REALIZED	EXPENDITURES ($ 000)
1.	CROWN LANDS			
	1.1 Plantation			
	. Site preparation	2 360 ha	1 851 ha	876.1
	. Manual planting[1]	3 602 ha	3 618 ha	1 760.2
	1.2 Plantation maintenance	ha	ha	
	1.3 Applied research	N/A	N/A	927.5
2.	PRIVATE WOODLANDS			
	2.1 Site preparation			
	. independent[2]	953 ha	1 219 ha	480.3
	. associated[3]	3 326 ha	2 859 ha	1 352.0
	2.2 Planting			
	- reforestation[4]			
	. independent[2]	2 676 ha	2 932 ha	1 182.0
	. associated[3]	3 700 ha	4 751 ha	1 974.4
	- maintenance			
	. independent[2]	631 ha	390 ha	133.0
	. associated[3]	1 147 ha	497 ha	183.2
3.	FEDERAL WOODLANDS			
	3.1 Silvicultural treatments	ha[5]	ha	
	3.2 Roads[6]	km	km	
	3.3 Technical support and administration	N/A	N/A	
4.	GREENHOUSE INFRASTRUCTURES	N/A	N/A	
5.	FIGHT AGAINST MAPLE DIEBACK			
	5.1 Accelerated research	N/A	N/A	384.0
	5.2 Operational fertilization	4 197 ha	5 117 ha	1 764.8
	5.3 Management	N/A	N/A	762.3
6.	MANAGEMENT, INFORMATION AND EVALUATION	N/A	N/A	1 210.6
			TOTAL	12 990.4

N/A Not applicable.

1 Surface area is calculated based on a ratio of 2 200 seedlings/ha for the planting of softwoods and 800 seedlings/ha for the planting of hardwoods and reinforcement planting.

2 Work carried out by woodlot owners who are not members of a group venture.

3 Work carried out by woodlot owners who are members of a group venture.

4 Surface area is calculated based on a ratio of 2 500 seedlings/ha for the planting of softwoods and reinforcement planting, and 1 500 seedlings/ha for the planting of hardwoods.

5 For planting and reinforcement planting, surface area is estimated based on ratios of 2 500 seedlings/ha and 1 100 seedlings/ha respectively.

6 Road construction or improvement.

Region 04: Trois Rivières

	PROGRAMS - ACTIVITIES	PROJECTED	REALIZED	EXPENDITURES ($ 000)
1.	CROWN LANDS			
	1.1 Plantation			
	. Site preparation	2 435 ha	3 013 ha	1 986.6
	. Manual planting[1]	6 160 ha	5 740 ha	2 809.6
	1.2 Plantation maintenance	ha	ha	
	1.3 Applied research	N/A	N/A	
2.	PRIVATE WOODLANDS			
	2.1 Site preparation			
	. independent[2]	366 ha	258 ha	100.7
	. associated[3]	1 385 ha	1 416 ha	613.5
	2.2 Planting			
	- reforestation[4]			
	. independent[2]	602 ha	744 ha	323.8
	. associated[3]	1 718 ha	2 317 ha	1 017.1
	- maintenance			
	. independent[2]	138 ha	17 ha	6.0
	. associated[3]	710 ha	167 ha	53.0
3.	FEDERAL WOODLANDS (Atikamekw Sipi, Obedjiwan, Weymontachie)			
	3.1 Silvicultural treatments	181 ha[5]	155.7 ha	66.926
	3.2 Roads[6]	km	km	
	3.3 Technical support and administration	N/A	N/A	192.953
4.	GREENHOUSE INFRASTRUCTURES	N/A	N/A	
5.	FIGHT AGAINST MAPLE DIEBACK			
	5.1 Accelerated research	N/A	N/A	45.0
	5.2 Operational fertilization	308 ha	0 ha	0.0
	5.3 Management	N/A	N/A	
6.	MANAGEMENT, INFORMATION AND EVALUATION	N/A	N/A	
			TOTAL	7 215.2

N/A Not applicable.

1 Surface area is calculated based on a ratio of 2 200 seedlings/ha for the planting of softwoods and 800 seedlings/ha for the planting of hardwoods and reinforcement planting.

2 Work carried out by woodlot owners who are not members of a group venture.

3 Work carried out by woodlot owners who are members of a group venture.

4 Surface area is calculated based on a ratio of 2 500 seedlings/ha for the planting of softwoods and reinforcement planting, and 1 500 seedlings/ha for the planting of hardwoods.

5 For planting and reinforcement planting, surface area is estimated based on ratios of 2 500 seedlings/ha and 1 100 seedlings/ha respectively.

6 Road construction or improvement.

Region 05: Eastern Townships

	PROGRAMS - ACTIVITIES	PROJECTED	REALIZED	EXPENDITURES ($ 000)
1.	CROWN LANDS			
	1.1 Plantation			
	. Site preparation	450 ha	262 ha	120.3
	. Manual planting[1]	84 ha	140 ha	123.7
	1.2 Plantation maintenance	ha	ha	
	1.3 Applied research	N/A	N/A	
2.	PRIVATE WOODLANDS			
	2.1 Site preparation			
	. independent[2]	550 ha	704 ha	270.0
	. associated[3]	1 422 ha	1 332 ha	563.0
	2.2 Planting			
	- reforestation[4]			
	. independent[2]	825 ha	729 ha	324.4
	. associated[3]	1 243 ha	1 733 ha	776.4
	- maintenance			
	. independent[2]	146 ha	115 ha	43.1
	. associated[3]	497 ha	149 ha	48.0
3.	FEDERAL WOODLANDS			
	3.1 Silvicultural treatments	ha[5]	ha	
	3.2 Roads[6]	km	km	
	3.3 Technical support and administration	N/A	N/A	
4.	GREENHOUSE INFRASTRUCTURES	N/A	N/A	
5.	FIGHT AGAINST MAPLE DIEBACK			
	5.1 Accelerated research	N/A	N/A	99.7
	5.2 Operational fertilization	1 077 ha	1 148 ha	321.8
	5.3 Management	N/A	N/A	
6.	MANAGEMENT, INFORMATION AND EVALUATION	N/A	N/A	
			TOTAL	2 690.4

N/A Not applicable.
1 Surface area is calculated based on a ratio of 2 200 seedlings/ha for the planting of softwoods and 800 seedlings/ha for the planting of hardwoods and reinforcement planting.
2 Work carried out by woodlot owners who are not members of a group venture.
3 Work carried out by woodlot owners who are members of a group venture.
4 Surface area is calculated based on a ratio of 2 500 seedlings/ha for the planting of softwoods and reinforcement planting, and 1 500 seedlings/ha for the planting of hardwoods.
5 For planting and reinforcement planting, surface area is estimated based on ratios of 2 500 seedlings/ha and 1 100 seedlings/ha respectively.
6 Road construction or improvement.

Region 06: Montreal

	PROGRAMS - ACTIVITIES	PROJECTED	REALIZED	EXPENDITURES ($ 000)
1.	CROWN LANDS			
	1.1 Plantation			
	. Site preparation	2 947 ha	2 303 ha	1 289.8
	. Manual planting[1]	2 403 ha	3 684 ha	1 581.2
	1.2 Plantation maintenance	ha	ha	
	1.3 Applied research	N/A	N/A	34.0
2.	PRIVATE WOODLANDS			
	2.1 Site preparation			
	. independent[2]	302 ha	453 ha	181.7
	. associated[3]	553 ha	391 ha	184.8
	2.2 Planting			
	- reforestation[4]			
	. independent[2]	525 ha	550 ha	244.4
	. associated[3]	695 ha	862 ha	371.0
	- maintenance			
	. independent[2]	43 ha	48 ha	17.0
	. associated[3]	218 ha	21 ha	6.1
3.	FEDERAL WOODLANDS (Doncaster, Manouane)			
	3.1 Silvicultural treatments	170 ha[5]	115.7 ha	52.375
	3.2 Roads[6]	km	km	
	3.3 Technical support and administration	N/A	N/A	31.787
4.	GREENHOUSE INFRASTRUCTURES	N/A	N/A	748.6
5.	FIGHT AGAINST MAPLE DIEBACK			
	5.1 Accelerated research	N/A	N/A	100.0
	5.2 Operational fertilization	ha	ha	
	5.3 Management	N/A	N/A	
6.	MANAGEMENT, INFORMATION AND EVALUATION	N/A	N/A	
			TOTAL	4 842.8

N/A Not applicable.
1 Surface area is calculated based on a ratio of 2 200 seedlings/ha for the planting of softwoods and 800 seedlings/ha for the planting of hardwoods and reinforcement planting.
2 Work carried out by woodlot owners who are not members of a group venture.
3 Work carried out by woodlot owners who are members of a group venture.
4 Surface area is calculated based on a ratio of 2 500 seedlings/ha for the planting of softwoods and reinforcement planting, and 1 500 seedlings/ha for the planting of hardwoods.
5 For planting and reinforcement planting, surface area is estimated based on ratios of 2 500 seedlings/ha and 1 100 seedlings/ha respectively.
6 Road construction or improvement.

Region 07: Outaouais

	PROGRAMS - ACTIVITIES	PROJECTED	REALIZED	EXPENDITURES ($ 000)
1.	CROWN LANDS			
	1.1 Plantation			
	. Site preparation	3 234 ha	3 577 ha	1 177.1
	. Manual planting[1]	2 985 ha	3 996 ha	1 455.3
	1.2 Plantation maintenance	ha	ha	
	1.3 Applied research	N/A	N/A	452.4
2.	PRIVATE WOODLANDS			
	2.1 Site preparation			
	. independent[2]	294 ha	151 ha	61.2
	. associated[3]	287 ha	418 ha	171.4
	2.2 Planting			
	- reforestation[4]			
	. independent[2]	462 ha	463 ha	197.9
	. associated[3]	423 ha	427 ha	190.9
	- maintenance			
	. independent[2]	29 ha	12 ha	4.5
	. associated[3]	164 ha	203 ha	74.5
3.	FEDERAL WOODLANDS (River Desert)			
	3.1 Silvicultural treatments	142 ha[5]	142.5 ha	42.226
	3.2 Roads[6]	km	km	
	3.3 Technical support and administration	N/A	N/A	25.995
4.	GREENHOUSE INFRASTRUCTURES	N/A	N/A	
5.	FIGHT AGAINST MAPLE DIEBACK			
	5.1 Accelerated research	N/A	N/A	
	5.2 Operational fertilization	ha	ha	
	5.3 Management	N/A	N/A	
6.	MANAGEMENT, INFORMATION AND EVALUATION	N/A	N/A	
			TOTAL	3 853.4

N/A Not applicable.
1 Surface area is calculated based on a ratio of 2 200 seedlings/ha for the planting of softwoods and 800 seedlings/ha for the planting of hardwoods and reinforcement planting.
2 Work carried out by woodlot owners who are not members of a group venture.
3 Work carried out by woodlot owners who are members of a group venture.
4 Surface area is calculated based on a ratio of 2 500 seedlings/ha for the planting of softwoods and reinforcement planting, and 1 500 seedlings/ha for the planting of hardwoods.
5 For planting and reinforcement planting, surface area is estimated based on ratios of 2 500 seedlings/ha and 1 100 seedlings/ha respectively.
6 Road construction or improvement.

Region 08: Abitibi/Temiscaming

	PROGRAMS - ACTIVITIES	PROJECTED	REALIZED	EXPENDITURES ($ 000)
1.	CROWN LANDS			
	1.1 Plantation			
	. Site preparation	2 815 ha	3 278 ha	906.9
	. Manual planting[1]	5 509 ha	3 410 ha	2 231.3
	1.2 Plantation maintenance	ha	ha	
	1.3 Applied research	N/A	N/A	40.0
2.	PRIVATE WOODLANDS			
	2.1 Site preparation			
	. independent[2]	208 ha	310 ha	125.1
	. associated[3]	1 027 ha	553 ha	211.5
	2.2 Planting			
	- reforestation[4]			
	. independent[2]	342 ha	291 ha	122.7
	. associated[3]	1 411 ha	1 652 ha	720.8
	- maintenance			
	. independent[2]	78 ha	157 ha	59.4
	. associated[3]	727 ha	1 110 ha	420.6
3.	FEDERAL WOODLANDS (Lac Simon, Waswanipi)			
	3.1 Silvicultural treatments	488 ha[5]	436.9 ha	115.516
	3.2 Roads[6]	1 km	0.7 km	9.851
	3.3 Technical support and administration	N/A	N/A	165.814
4.	GREENHOUSE INFRASTRUCTURES	N/A	N/A	107.4
5.	FIGHT AGAINST MAPLE DIEBACK			
	5.1 Accelerated research	N/A	N/A	
	5.2 Operational fertilization	ha	ha	
	5.3 Management	N/A	N/A	
6.	MANAGEMENT, INFORMATION AND EVALUATION	N/A	N/A	
			TOTAL	5 236.9

N/A Not applicable.
1 Surface area is calculated based on a ratio of 2 200 seedlings/ha for the planting of softwoods and 800 seedlings/ha for the planting of hardwoods and reinforcement planting.
2 Work carried out by woodlot owners who are not members of a group venture.
3 Work carried out by woodlot owners who are members of a group venture.
4 Surface area is calculated based on a ratio of 2 500 seedlings/ha for the planting of softwoods and reinforcement planting, and 1 500 seedlings/ha for the planting of hardwoods.
5 For planting and reinforcement planting, surface area is estimated based on ratios of 2 500 seedlings/ha and 1 100 seedlings/ha respectively.
6 Road construction or improvement.

Region 09: North Shore

	PROGRAMS - ACTIVITIES	PROJECTED	REALIZED	EXPENDITURES ($ 000)
1.	CROWN LANDS			
	1.1 Plantation			
	. Site preparation	2 146 ha	2 553 ha	623.6
	. Manual planting[1]	1 181 ha	727 ha	379.0
	1.2 Plantation maintenance	ha	ha	
	1.3 Applied research	N/A	N/A	
2.	PRIVATE WOODLANDS			
	2.1 Site preparation			
	. independent[2]	46 ha	19 ha	7.3
	. associated[3]	250 ha	265 ha	113.2
	2.2 Planting			
	- reforestation[4]			
	. independent[2]	27 ha	19 ha	8.4
	. associated[3]	212 ha	308 ha	133.8
	- maintenance			
	. independent[2]	3 ha	ha	
	. associated[3]	81 ha	4 ha	1.2
3.	FEDERAL WOODLANDS (Betsiamites, Maliotenam)			
	3.1 Silvicultural treatments	446 ha[5]	374.8 ha	127.827
	3.2 Roads[6]	6 km	5 km	7.530
	3.3 Technical support and administration	N/A	N/A	115.222
4.	GREENHOUSE INFRASTRUCTURES	N/A	N/A	
5.	FIGHT AGAINST MAPLE DIEBACK			
	5.1 Accelerated research	N/A	N/A	
	5.2 Operational fertilization	ha	ha	
	5.3 Management	N/A	N/A	
6.	MANAGEMENT, INFORMATION AND EVALUATION	N/A	N/A	
			TOTAL	1 517.1

N/A Not applicable.
1 Surface area is calculated based on a ratio of 2 200 seedlings/ha for the planting of softwoods and 800 seedlings/ha for the planting of hardwoods and reinforcement planting.
2 Work carried out by woodlot owners who are not members of a group venture.
3 Work carried out by woodlot owners who are members of a group venture.
4 Surface area is calculated based on a ratio of 2 500 seedlings/ha for the planting of softwoods and reinforcement planting, and 1 500 seedlings/ha for the planting of hardwoods.
5 For planting and reinforcement planting, surface area is estimated based on ratios of 2 500 seedlings/ha and 1 100 seedlings/ha respectively.
6 Road construction or improvement.

Region 10: Northern Quebec

PROGRAMS - ACTIVITIES	PROJECTED	REALIZED	EXPENDITURES ($ 000)
1. CROWN LANDS			
1.1 Plantation			
. Site preparation	ha	ha	
. Manual planting[1]	ha	ha	
1.2 Plantation maintenance	ha	ha	
1.3 Applied research	N/A	N/A	
2. PRIVATE WOODLANDS			
2.1 Site preparation			
. independent[2]	ha	ha	
. associated[3]	ha	ha	
2.2 Planting			
- reforestation[4]			
. independent[2]	ha	ha	
. associated[3]	ha	ha	
- maintenance			
. independent[2]	ha	ha	
. associated[3]	ha	ha	
3. FEDERAL WOODLANDS			
3.1 Silvicultural treatments	ha[5]	ha	
3.2 Roads[6]	km	km	
3.3 Technical support and administration	N/A	N/A	
4. GREENHOUSE INFRASTRUCTURES	N/A	N/A	
5. FIGHT AGAINST MAPLE DIEBACK			
5.1 Accelerated research	N/A	N/A	
5.2 Operational fertilization	ha	ha	
5.3 Management	N/A	N/A	
6. MANAGEMENT, INFORMATION AND EVALUATION	N/A	N/A	
		TOTAL	

N/A Not applicable.

1 Surface area is calculated based on a ratio of 2 200 seedlings/ha for the planting of softwoods and 800 seedlings/ha for the planting of hardwoods and reinforcement planting.

2 Work carried out by woodlot owners who are not members of a group venture.

3 Work carried out by woodlot owners who are members of a group venture.

4 Surface area is calculated based on a ratio of 2 500 seedlings/ha for the planting of softwoods and reinforcement planting, and 1 500 seedlings/ha for the planting of hardwoods.

5 For planting and reinforcement planting, surface area is estimated based on ratios of 2 500 seedlings/ha and 1 100 seedlings/ha respectively.

6 Road construction or improvement.

APPENDIX B

CROWN LAND FOREST MANAGEMENT PROGRAM

LIST OF APPLIED RESEARCH PROJECTS FUNDED BY THE AGREEMENT

(1989-1990)

APPENDIX B

PROGRAM: CROWN LAND FOREST MANAGEMENT
List of applied research projects
funded by the Agreement (1989-1990)

PROJECT NO.	NATURE OF PROJECT	($ 000) EXPENDITURES	
		PROJECTED	ACTUAL
	FOREST IMPROVEMENT		
82118	Screening of poplar clones for resistance or tolerance to canker caused by *Septoria musiva* Pk.	50.1	66.6
82122	Tissue culture and genetic transformation of genus *Betula*	10.8	15.0
82129	Characterization of *Septoria musiva* Pk. strains present in Quebec	8.7	12.0
82130	Selection of Jack pine stock and descendants resistant to scleroderris canker	14.5	20.0
82211	Mineral nutrition of forest seedlings in nurseries	32.5	2.0
82214	Protection of nursery seedlings against early and late frost	18.1	32.5
82215	Floral induction to achieve controlled cross-breeding and to increase seed production	44.2	46.1
82224	Development of etiolated seedlings in greenhouses and comparative plantations	14.5	20.0
82229	Morphophysiological study of the development of young conifers grown in nurseries	44.6	14.9
82233	Root girdling of containerized seedlings	21.0	30.2
82236	Experimental production (CRBF)	21.7	30.0
82241	Technical development of a seeder for pregerminated seeds	24.6	34.0

APPENDIX B (CONTINUED)

PROJECT NO.	NATURE OF PROJECT	($ 000) EXPENDITURES PROJECTED	ACTUAL
82242	Fertilization by carbon dioxide of containerized tree seedlings in production tunnels in Quebec	18.1	25.0
82243	Evaluation of genetic strains of *Laccoria bicolor* for the inoculation of forest seedlings	18.1	25.0
82304	Research on the fertilization of established softwood plantations	57.7	22.0
82314	Development of intensive tree culture systems on short rotations	68.7	14.1
82321	Biological (allelopathic) control of rasberry plant *(Rubus idaeus)* on commercial woodlands	21.7	30.0
82346	Research and development on plantation clearing and maintenance methods	65.8	88.6
82350	Research and development on plantations of hardwood species	78.1	94.8
82413	Regeneration, growth and treatments of superior hardwood stands	8.1	6.1
82414	Testing management of uneven-aged stands through cuttings of varying intensity in associations of sugar maple and yellow birch	83.6	126.6
82424	Juvenile growth of natural black spruce stands in the commercial boreal spruce forest zone	28.9	40.0
82435	Study of various interventions in riverine strips	31.7	5.4
82437	Determining relationships between stable factors related to the environment, competition and regeneration after cutting	14.5	20.0

APPENDIX B (CONTINUED)

PROJECT NO.	NATURE OF PROJECT	($ 000) EXPENDITURES PROJECTED	ACTUAL
	FOREST PROTECTION		
83302	Research into dieback and nutritional status in Quebec maple stands	92.0	124.5
	TECHNOLOGY TRANSFER		
88201	Technical information	36.9	9.5
88205	Technology Transfer Centre of Maniwaki (protection against forest fires)	452.4	452.4
88208	Field guide for the classification of forest stations on thin soil on the Upper North Shore	18.1	40.0
88301	Production of technology transfer material	54.2	6.6
	TOTAL:	1 453.9	1 453.9

APPENDIX C

FIGHT AGAINST MAPLE DIEBACK PROGRAM

LIST OF ACCELERATED RESEARCH AND DEVELOPMENT PROJECTS FUNDED BY THE AGREEMENT

(1989-1990)

APPENDIX C

PROGRAM: FIGHT AGAINST MAPLE DIEBACK

List of accelerated research and development projects funded by the Agreement (1989-1990)

PROJECT NO.	NATURE OF PROJECT	($ 000) EXPENDITURES PROJECTED	ACTUAL
83501	Model of the outcome of fertilizers or enrichments in dieback-affected maple groves in Quebec	62.0	62.0
83502	Soil chemistry in a sugar maple stand affected by acidic precipitation	72.0	72.0
83503	Feasibility study for the characterization of dry deposits in woodlands	28.0	28.0
83504	Effects of fertilization on the vigour and physiology of dieback-affected sugar maples	28.0	28.0
83505	Study of the pattern of spectral reflectance of leaves of sugar maple *(Acer saccharum)* suffering from dieback	20.0	20.0
83506	Prototype of a photoacoustic spectrofluorimeter and its application in the area of forest dieback	45.0	45.0
83507	Dendrochronology and mensuration of maple groves in southern Quebec	45.0	45.0
83522	Search for palliatives to counter dieback in *Acer saccharum*	249.0	249.0
MAPAQ	Analysis of plant tissue and soil samples in the Rock Forest laboratory	100.0	79.7
	TOTAL:	649.0	628.7